

AEROFILL

**Lightweight
Thermal Insulating
Aerated Concrete**



**Made with
Portland Cement,
Sand and
Air Cells**

**FOR ROOF FILL
FLOOR FILL
NON-LOAD BEARING WALLS
INSULATION**

- Controlled Uniform Densities
- Low Cost
- Reduces Dead Weight
- Ease of Preparation and Placing
- Low Water-Cement Ratio
- Quick Drying

**AIA File 37-A (INSULATION)
AIA File 4-E-13 (LIGHTWEIGHT CONCRETE)**

CELLULAR PRODUCTS COMPANY, LOS ANGELES, CALIF.

AEROFILL

the Economical Lightweight Concrete

AEROFILL IS cellular, aerated concrete made by introducing air cells consisting of a pre-formed, stabilized foam into a mixture of Portland cement, sand and water. The foam is *mechanically* produced by a simple operating machine for quickly making a fine textured foam ...and is added to the mortar mix in predetermined amounts depending on the density required. No special equipment is needed for mixing ...any standard concrete, mortar, or plaster mixer can be used.

Reduces Dead Weight: Aerofill cellular concrete owes its lightness and insulating qualities to the presence of extremely small, individual air cells...uniformly distributed throughout the mass. These cells promote the best features of insulation and strength...combined with very light weight.

Controlled Uniform Densities: AEROFILL made by the mechanical foam process offers the first practical method of obtaining *precise* control of the air content necessary to meet predetermined strength requirements. Aerofill can be produced with a density variation of within 1 pound per cubic foot. In normal operating field conditions, variations will not exceed 2 lbs. per cu. ft. Results are reliable, consistent and reproducible over the entire weight range of 20 to 100 lbs. per cu. ft.

Quick Setting and Drying: Aerofill concrete sets and hardens like

ordinary concrete. No free surface water collects during placing. Depending on the specified density, the material may be walked upon without damage within 8 to 12 hours in moderate weather, and within 36 hours during the coldest weather. Aerofill concrete dries out quickly...eliminating the lengthy drying time ordinarily required before roofing.

Ease of Placing: Aerofill concrete can be poured in place, pumped, or spray applied. Stability of the foam is such that not only will the air cells withstand the rough treatment during mixing and placing, but the cellular structure remains un-altered during setting. This property prevents segregation and makes it possible to pump Aerofill concrete through small bore hoses...and concrete cannot over-flow the forms because no gas generating chemicals are used in the Aerofill process.

Low Cost: Aerofill concrete is made from the common, low cost materials of Portland cement, sand, and water ...and can be produced wherever cement and aggregate is available. Another savings factor is Aerofill's availability to areas remote from sources of lightweight aggregates...or where aggregate cost is high.

Strength: Weight for weight, Aerofill concrete is generally superior to other non-structural insulating concretes...which is due to the positive density control obtained by mechanical aeration. The strength of air

cured Aerofill concrete increases with age. Depending on the density, the strength at one year shows an increase of 25% to 50% over the 28 day strength. Exposure to water does not reduce Aerofill's strength. The tensile strength is within the range of 1/5 to 1/4 the compressive strength. Strength/weight relation can be varied over a broad range by simple adjustment of density and cement content. Aerofill can be produced to meet any reasonable weight-strength requirement.

Thermal Insulation: As both density and actual cell size are factors affecting thermal insulation, an important feature of the Aerofill process is that it provides uniform densities together with a very small cell size. Aerofill concrete may be sloped to the drains at the time of pouring...an important advantage over rigid type insulations. A two

AEROFILL CONCRETE IS PRODUCED -

On the job under the direct supervision of Cellular Products Co. through its field representative. A complete service is provided at the site to insure quality control for making and placing Aerofill concrete of any density.

AEROFILL CONCRETE IS INCOMBUSTIBLE, ROT AND VERMIN PROOF

inch layer of Aerofill insulating concrete has about the same insulation value as a one inch thickness of cork.

Water Absorption: Although Aerofill insulating concrete is low in density and seemingly porous, it has remarkable resistance to water absorption. In the low density range, the absorption of Aerofill concrete is 8 to 10% by volume. Low moisture absorption is important because Thermal conductivity is increased when insulants become damp.

Shrinkage: Like all concrete products, shrinkage varies directly with the composition of the mix...the method and degree of curing. The drying shrinkage of Aerofill concrete in the medium to high density range does not differ significantly from that of conventional concrete.

Wearing Surface: Aerofill concrete floors may be finished monolithically. However, in the low density range, the result is not suitable as an exposed wearing surface. In such cases, a wearing surface may be obtained through application of a concrete topping, or covering such as wood, asphalt tile, etc.

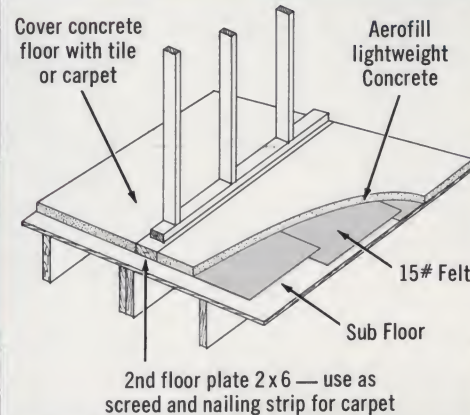
Physical properties of Aerofill cellular concrete are shown in the table below. The strength ranges for a given weight are for the more common mixes of cement and sand. For special properties, lightweight aggregates, wood sawdust, asbestos fibres, cork flour or fire brick grog may be used in place of sand. The Architect should select and specify the weight and strength based upon the particular application of Aerofill concrete to his job.

USE	DENSITY lbs. per cu. ft.	COMPRESSIVE STRENGTH * 6x12 cylinders, 28-days pounds per sq. inch	THERMAL CONDUCTIVITY "K" BTU/Hr./sq. ft./ inch/degree F.
Fireproofing of Steel Insulating Roof Fill Underground Pipe Insulation Radiant Heat sub-floor fill Insulation against Permafrost	25	100	.65
	30	150	.75
	35	200	.90
	40	250	1.10
	45	350	1.20
Insulating Floor Fill Non Load Bearing Walls Insulating fill for composite Slabs Cast in place partitions	50	400	1.30
	60	450	1.65
	70	500	2.00
	80	700	2.50
Reinforced panels Precast Slabs Sound insulating and fire resistant Floor Fill ...	85	800	2.75
	90	900	3.00
	95	1000	3.30
	100	1100	3.65
	110	1500	4.40

*Compressive strength can be varied from those listed by choice of materials and mix design.

Aerofill concrete can be furnished to the contractor:

1. Readymixed — through local readymix concrete supplier.
2. Mixed and pumped directly to the roof deck.
3. Installed complete. All equipment, material, and labor is furnished by Cellular Products Co.



Second floor construction diagram for Aerofill sound insulating and fire resistant floors on apartments and motels.



Placing costs are cut by delivering Aerofill directly to the roof deck by means of pump and hose.

AEROFILL insulating concrete is made with a low water/cement ratio — facilitates quick drying — gives you these advantages:

1. Dries quickly like ordinary concrete.
2. Speeds construction by avoiding long drying period.
3. Reduces danger of roof blisters due to excess moisture.

RAYMOND G. OSBORNE
LABORATORIES, INC.
TESTING AND INSPECTION ENGINEERS

LOS ANGELES 19 November 3, 1954

COMPRESSION TEST REPORT

Cellular Products Company
AEROFILL LIGHTWEIGHT AERATED CONCRETE

LABORATORY DATA	
Laboratory Number	40921
Mark	5-22-54
Date moulded	11-3-54
Date tested	31.3
Age, days	5.85x11.55
Weight per cu. ft., lbs.	26.88
Dimensions, (inches)	4, 180
Area, sq. in.	156
Compressive Strength	156
Total lbs.	156
Lbs. per sq. in.	156

FIELD DATA

Specified Strength @ 7-day Strength reports

Stamp

Administrative

Remarks:

Independent laboratory tests
certify performance
specifications.

Weight per cu. ft. lbs. . . 31.3 34.5

Compressive strength psi. 156 437

The Twining Laboratories
THE BEST SHIPPED COMMERCIAL LABORATORIES ON THE PACIFIC COAST

April 4, 1956 Examination 304903

For - Cellular Products Company
1238 South Atlantic Blvd.
Los Angeles 22, California

Attention: E. R. Jolly

Sample: Aerofill lightweight aerated concrete
delivered to The Twining Laboratories
by Mr. E. R. Jolly on March 30, 1956.

Size: Length - 12"; width - 12"; thickness - 1"

PHYSICAL TESTS:

Sample Marked - - - - - 6/16 R-Com.

Density, lbs./cu. ft. - - - - - 27.1

Thermal Conductivity, B.T.U. per hour, per square foot,
per degree Fahrenheit, per inch of thickness (K-factor).
K = 0.70 at mean temperature of 145°F

THE TWINING LABORATORIES
By *Paul W. Twining*

K factor 0.70 at
27.1 lbs. /cu. ft. density.

AEROFILL SPECIFICATIONS

LIGHTWEIGHT CONCRETE ROOF FILL shall be Aerofill lightweight concrete having a density of 30 pounds per cubic foot and a compressive strength of 150 psi at 28 days. Mix proportions shall be in accordance with the directions of Cellular Products Co., 1238 S. Atlantic Blvd., Los Angeles, and the production of Aerofill on the job shall be subject to inspection and quality control by its representative. Roof fill shall be placed true to grades to form drainage features in connection with roof surfaces as indicated or required.

PLACING: Roof area shall be laid out in bays of a convenient width not exceeding 15 feet. Concrete shall be placed in alternate bays as soon as possible after mixing, and shall be deposited in a continuous operation until each panel section is completed. Fill shall be rodded with a straight edge by movement uniformly in one direction. After the surface has been rodded, it shall be left alone and not further rodded or worked. Screeds shall be removed after concrete has hardened and the remaining bays filled in, levelling between the set concrete on either side. In cold weather, the surface shall be protected from foot traffic by laying down wood walking strips.

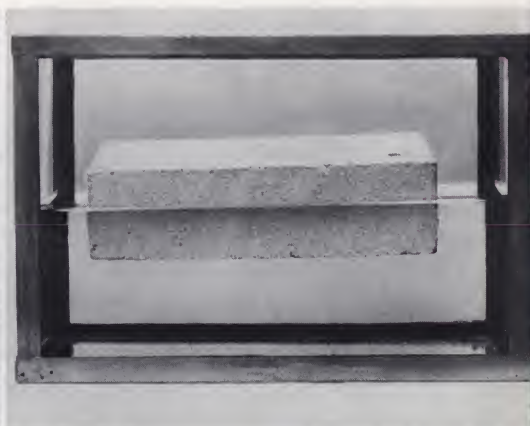
PROTECTION AND CURING: Lightweight fill shall be protected from rapid drying by curing either with water or application of Hunts Process Black "120", or equal. Curing compound shall be applied with an approved power driven pressure sprayer in the amount of 1 gallon to each 300 to 350 square feet, just as soon as the surface can be sprayed without dimpling. No foot traffic of any kind shall be permitted on the fill during application of compound or for 48 hours after pouring.



Aerofill concrete cannot burn... sample is held in hand without damage after applying direct flame of acetylene torch for one hour.



Placing Aerofill concrete floor fills over ductwork is much easier than with conventional concrete. Containing no coarse aggregate, Aerofill flows readily into spaces having small clearances.



Aerofill insulating concretes in the low density range have very low absorption capacity... and will float in water indefinitely.

CELLULAR PRODUCTS CO.

LOS ANGELES 22, 1238 So. Atlantic Blvd. • AN 2-1725

SAN FRANCISCO 11, 420 Market Street • EX 7-6397

PHOENIX, 9300 No. 12th Avenue • WI 4-2531

SEATTLE 9, 901 Fairview Ave., No. • MA 2-2900

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Independent laboratory tests

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From the collection of:

Mike Jackson, FAIA

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